Columbia Front-End Usage Guidelines

Category: Front-End Usage Guidelines

DRAFT

This article is being reviewed for completeness and technical accuracy.

The front-end system, cfe2, provide an environment that allows users to get quick turnaround while performing the following: file editing; file management; short debugging and testing sessions; and batch job submission to the compute systems.

Running long and/or large (in terms of memory and/or number of processors) debugging or production jobs interactively or in the background of cfe2 is considered to be inconsiderate behavior to the rest of the user community. If you need help submitting such jobs to the batch systems, please contact a NAS scientific consultant at (650) 604-4444 or 1-800-331-USER or send e-mail to: support@nas.nasa.gov

Jobs that cause significant impact on the system load of the Columbia front-end machine (cfe2) are candidates for removal in order to bring the front-end systems back to a normal and smooth environment for all users. A *cron* job regularly monitors the system load and determines if job removal is necessary. The criteria for job removal are described below. Owners of any removed jobs will receive a notification e-mail.

1. To be eligible for removal, the number of processors a front-end interactive job uses can be one (1) or more. Exceptions to this are those programs, utilities, etc. common to users and/or NASA missions that are listed in an "exception file". Examples of these would be:

   bash cp csh emacs gzip rsync scp sftp sh ssh tar tcsh

   Users can submit program names to be added to this exception file by mailing requests to: support@nas.nasa.gov
2. For qualifying processes, the CPU time usage of each process in a job has, on the average, exceeded a threshold defined as:

   (20 min x 8 / number of processes for the job)

   That is, a baseline for removal is a job with 8 processors running for more than 20 minutes. The maximum amount of time allowed for each processor in a job is scaled using the formula:

20 min x 8 cpu / number-of-processes

Therefore, the following variations are possible:

- 160 minutes = (20 * 8) / 1 cpu
- 80 minutes = (20 * 8) / 2 cpu
- 40 minutes = (20 * 8) / 4 cpu
- 20 minutes = (20 * 8) / 8 cpu
- 10 minutes = (20 * 8) / 16 cpu
- 5 minutes = (20 * 8) / 32 cpu
- 2.5 minutes = (20 * 8) / 64 cpu

The conditions of removal are subject to change, when necessary.

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